

Notice of Allowability

Application No.

10/801,042

Examiner

Kamran Afshar, 571-272-7796

Applicant(s)

FISCHER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/18/07 & 7/17/07.
2. ☒ The allowed claim(s) is/are 1,4,5,9-16,20 and 24-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Benjie Balser, Reg. No.: 58,169 on 7/17/2007.

The application has been amended as follows:

In The Claim(s):

1. (Currently Amended) A multiple channel modulation method in a wireless local area network, the method comprising:
receiving a first portion of a data block on a first shared-communications channel;
receiving a second portion of said data block on a second shared-communications channel;
transmitting a first acknowledgment frame into said second shared-communications channel, wherein said first acknowledgment frame indicates receipt of said first portion and said second portion of said data block; and
transmitting a duplicate first acknowledgment frame into said first shared-communications channel, wherein said duplicate first acknowledgment frame indicates receipt of said first portion and said second portion of said data block, wherein a first station transmits using said first shared-communications channel and said second shared-communications channel simultaneously and wherein a second station transmits using said first shared-communications channel only.
2. (Canceled).
3. (Canceled).

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4. (Previously Presented) The method of claim 1 wherein said first acknowledgment frame and said duplicate first acknowledgment frame are transmitted at substantially the same time.

5. (Currently Amended) A multiple channel modulation method in a wireless local area network, the method comprising:

transmitting a first portion of a data block into a first shared-communications channel;

transmitting a second portion of said data block into a second shared-communications channel;

receiving a first acknowledgment frame on said second shared-communications channel, wherein said first acknowledgment frame indicates receipt of said first portion and said second portion of said data block; and

receiving a second acknowledgment frame duplicative of the first acknowledgement frame on said first shared-communications channel, wherein said second acknowledgment frame indicates receipt of said first portion and said second portion of said data block,

wherein a first station transmits using said first shared-communications channel and said second shared-communications channel simultaneously and wherein a second station transmits using said first shared-communications channel only.

6. (Canceled).

7. (Canceled).

8. (Canceled).

9. (Original) The method of claim 5 wherein transmitting said first portion of said data block and transmitting said second portion of said data block occur (i) at substantially the same time and (ii) with the same modulation.

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10. (Original) The method of claim 5 further comprising:
transmitting a first control frame into said first shared-communications channel before
transmitting said first portion of said data block; and
transmitting a second control frame into said second shared-communications channel
before transmitting said second portion of said data block.
11. (Original) The method of claim 10 wherein said first control frame is one of a
Request_to_Send frame and a Clear_to_Send frame.
12. (Currently Amended) A multiple channel modulation method in a wireless local area
network, the method comprising:
receiving first and second duplicative acknowledgements that indicate receipt of a first
and second portion of a data block on a first shared-communications channel
and a second shared-communications channel; and
transmitting a portion of said data block into at least one of (i) said first shared-
communications channel and (ii) said second shared-communications channel,
wherein the choice of shared-communications channel used for transmitting said
portion is based on (a) the contents of said acknowledgments and (b) the shared-
communications channel over which said acknowledgements were received,
wherein said first acknowledgment frame also indicates receipt of said second portion of
said data block, and wherein said second acknowledgment frame also indicates
receipt of said first portion of said data block; and
wherein a first station transmits using said first shared-communications channel and said
second shared-communications channel simultaneously and wherein a second
station transmits using said first shared-communications channel only.

13. (Previously Presented) The method of claim 12 wherein said acknowledgments comprise at least one of (i) a first acknowledgment frame received on said second shared-communications channel and (ii) a second acknowledgment frame received on said first shared-communications channel.

14. (Original) The method of claim 13 wherein said first acknowledgment frame indicates receipt of at least one of (i) a first portion of said data block sent on said first shared-communications channel and (i) a second portion of said data block sent on said second shared-communications channel.

15. (Original) The method of claim 12 wherein transmitting said portion of said data block occurs over the combination of said first shared-communications channel and said second shared-communications channel.

16. (Currently Amended) An apparatus in a multiple channel modulation system in a wireless local area network, the apparatus comprising:

a receiver for:

- (i) receiving a first portion of a data block on a first shared-communications channel; and
- (ii) receiving a second portion of said data block on a second shared-communications channel; and

a transmitter for:

- (i) transmitting a first acknowledgment frame into said second shared-communications channel, wherein said first acknowledgment frame indicates receipt of said first portion and said second portion of said data block; and

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- (ii) transmitting a duplicative second acknowledgment frame into said first shared-communications channel, wherein said second acknowledgment frame indicates receipt of said first portion and said second portion of said data block,

wherein said receiver and said transmitter constitute a first station, which transmits using said first shared-communications channel and said second shared-communications channel simultaneously and wherein a second station transmits using said first shared-communications channel only.

17. (Canceled).

18. (Canceled).

19. (Previously Presented) The apparatus of claim 16 wherein said transmitter transmits said first acknowledgment frame and said duplicative second acknowledgment frame at substantially the same time.

20. (Previously Presented) An apparatus in a multiple channel modulation system in a wireless local area network, the apparatus comprising:

a transmitter for:

- (i) transmitting a first portion of a data block into a first shared-communications channel; and
- (ii) transmitting a second portion of said data block into a second shared-communications channel; and

a receiver for receiving a first acknowledgment frame on said second shared-communications channel, wherein said first acknowledgment frame indicates receipt of said first portion and said second portion of said data block; and

receiving a duplicative second acknowledgment frame on said first shared-communications channel, wherein said duplicative second acknowledgment frame indicates receipt of said first portion and said second portion of said data block,

wherein said receiver and said transmitter constitute a first station, which transmits using said first shared-communications channel and said second shared-communications channel simultaneously and wherein a second station transmits using said first shared-communications channel only.

21. (Canceled).

22. (Canceled).

23. (Canceled).

24. (Original) The apparatus of claim 20 wherein said transmitter transmits said first portion of said data block and said second portion of said data block (i) at substantially the same time and (ii) with the same modulation.

25. (Original) The apparatus of claim 20 wherein said transmitter is also for (i) transmitting a first control frame into said first shared-communications channel before transmitting said first portion of said data block and (ii) transmitting a second control frame into said second shared-communications channel before transmitting said second portion of said data block.

26. (Original) The apparatus of claim 25 wherein said first control frame is one of a Request_to_Send frame and a Clear_to_Send frame.

27. (Currently Amended) An apparatus in a multiple channel modulation system in a wireless local area network, the apparatus comprising:

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a receiver for receiving duplicative acknowledgments that indicates receipt of a first portion and a second portion of a data block on a first shared-communications channel and a second shared-communications channel; and

a transmitter for transmitting a portion of said data block into at least one of (i) said first shared-communications channel and (ii) said second shared-communications channel, wherein the choice of shared-communications channel used for transmitting said portion is based on (a) the contents of said acknowledgments and (b) the shared-communications channel over which said acknowledgements were received.

wherein said acknowledgments comprise a first acknowledgment frame received on said second shared-communications channel and a duplicative second acknowledgment frame received on said first shared-communications channel; said first acknowledgment frame indicates receipt of a first portion of said data block sent on said first shared-communications channel and a second portion of said data block sent on said second shared-communications channel; and transmitting said portion of said data block occurs over the combination of said first shared-communications channel and said second shared-communications channel simultaneously.

- 28. (Canceled).
- 29. (Canceled).
- 30. (Canceled).

Allowable Subject Matter

2. In View of the amended claims as discussed above in item 1, Claims 1, 4-5, 9-16, 20, and 24-27 are allowed.

The following is an examiner's statement of reasons for allowance: 1, 4-5, 9-16, 20, and 24-27.

With respect to claim 1, the prior art of record fails to disclose singly or in combination or render obvious that transmitting a first acknowledgment frame into the second shared-communications channel, wherein the first acknowledgment frame indicates receipt of the first portion and the second portion of the data block; and transmitting a duplicate first acknowledgment frame into the first shared-communications channel, wherein the duplicate first acknowledgment frame indicates receipt of the first portion and the second portion of the data block, wherein a first station transmits using the first shared-communications channel and the second shared-communications channel simultaneously and wherein a second station transmits using the first shared-communications channel only.

With respect to claim 5, the prior art of record fails to disclose singly or in combination or render obvious that transmitting a second portion of the data block into a second shared-communications channel; receiving a first acknowledgment frame on the second shared-communications channel, wherein the first acknowledgment frame indicates receipt of the first portion and the second portion of the data block; and receiving a second acknowledgment frame duplicative of the first acknowledgement frame on the first shared-communications channel, wherein the second acknowledgment frame indicates receipt of the first portion and the second portion of the data block, wherein a first station transmits using the first shared-communications channel and the second shared-communications channel simultaneously and wherein a second station transmits using the first shared-communications channel only.

With respect to claim 12, the prior art of record fails to disclose singly or in combination or render obvious that transmitting a portion of the data block into at least one of (i) the first shared-communications channel and (ii) the second shared-communications channel, wherein the choice of shared-communications channel used for transmitting the portion is based on (a) the contents of the acknowledgments and (b) the shared-communications channel over which the acknowledgements were received, wherein the first acknowledgment frame also indicates receipt of the second portion of the data block, and wherein the second acknowledgment frame also indicates receipt of the first portion of the data block; and wherein a first station transmits using the first shared-communications channel and the second

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shared-communications channel simultaneously and wherein a second station transmits using the first shared-communications channel only.

With respect to claim 16, the prior art of record fails to disclose singly or in combination or render obvious that receiving a second portion of the data block on a second shared-communications channel; and a transmitter for: transmitting a first acknowledgment frame into the second shared-communications channel, wherein the first acknowledgment frame indicates receipt of the first portion and the second portion of the data block; and (ii) transmitting a duplicative second acknowledgment frame into the first shared-communications channel, wherein the second acknowledgment frame indicates receipt of the first portion and the second portion of the data block, wherein the receiver and the transmitter constitute a first station, which transmits using the first shared-communications channel and the second shared-communications channel simultaneously and wherein a second station transmits using the first shared-communications channel only.

With respect to claim 20, the prior art of record fails to disclose singly or in combination or render obvious that transmitting a second portion of the data block into a second shared-communications channel; and a receiver for receiving a first acknowledgment frame on the second shared-communications channel, wherein the first acknowledgment frame indicates receipt of the first portion and the second portion of the data block; and receiving a duplicative second acknowledgment frame on the first shared-communications channel, wherein the duplicative second acknowledgment frame indicates receipt of the first portion and the second portion of the data block, wherein the receiver and the transmitter constitute a first station, which transmits using the first shared-communications channel and the second shared-communications channel simultaneously and wherein a second station transmits using the first shared-communications channel only.

With respect to claim 27, the prior art of record fails to disclose singly or in combination or render obvious that transmitting a portion of the data block into at least one of (i) the first shared-communications channel and (ii) the second shared-communications channel, wherein the choice of shared-communications channel used for transmitting the portion is based on (a) the contents of the acknowledgments and (b) the shared-communications channel over which the acknowledgements were

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received, wherein the acknowledgments comprise a first acknowledgment frame received on the second shared-communications channel and a duplicative second acknowledgment frame received on the first shared-communications channel; the first acknowledgment frame indicates receipt of a first portion of the data block sent on the first shared-communications channel and a second portion of the data block sent on the second shared-communications channel; and transmitting the portion of the data block occurs over the combination of the first shared-communications channel and the second shared-communications channel simultaneously.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a) Bergamasco (U.S. Pub. No.: 2005/0141419 A1).
 - b) Pazhyannur (U.S. 6,198,735 B1).
 - c) Murakami (U.S. 7,177,300 B2).
 - d) Forehlich (U.S. Pub. No.: 2003/0031161 A1).
 - e) Sagfors (U.S. Pub. No.: 2005/0002412 A1).
 - f) Kelly (U.S. 6,834,039 B1).
 - g) Banerjee (U.S. 7,061,856 B2).
 - h) Li (U.S. 6,757,248 B1).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

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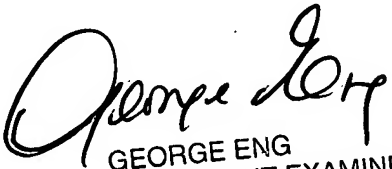
If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, **Eng, George** can be reached @ (571) 272-3984. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patent Examiner

Kamran Afshar



GEORGE ENG
SUPERVISORY PATENT EXAMINER